IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BOARD OF PATENT APPEALS AND INTERFERENCES

In re Application of

Kruelen, et al.

Serial No.: 09/848,430   Group Art Unit: 2176

Filed: May 4, 2001   Examiner: Ries, Laurie Anne

For: **AN EFFICIENT STORAGE MECHANISM FOR REPRESENTING TERM
      OCCURRENCE IN UNSTRUCTURED TEXT DOCUMENTS**

Commissioner of Patents
Alexandria, VA 22313-1450

APPELLANTS' RESPONSE TO BOARD'S NEW REJECTION

Sir:

Appellants respectfully respond hereinbelow to the arguments in the new rejection
raised by the Board in its review of the Appeal for the above-identified application. The
new rejection was described in the Decision on Appeal dated June 8, 2007. For the
convenience of the Board's review, this response contains only Appellants' reply to the
new rejection and does not repeat the format of the appeal brief.

A Request for Rehearing is filed concurrently herewith to initiate evaluation of this
response.

As best understood, claims 3, 4, 7, 8, 11, and 12 are allowable by reason of the
Examiner's withdrawal of the rejection for these claims, and the rejection for claims 2, 6,
10, 14, and 16 have been reversed by the Board.

The Board has entered a new ground of rejection for claims 1, 5, 9, 13, 15, 18, and
20-22, based on anticipation by US Patent Publication US 2002/01657907 to Call. It

would appear that claim 17 is intended as being allowable and that claim 19 is actually considered as rejected under the new rejection.

The New Rejection

Beginning on page 9 of the Decision on Appeal, the Board enters a new ground of rejection for claims 1, 5, 9, 13, 15, 18, and 20-22, relying upon the description in paragraph [0139] of Call and, more specifically, the wording: "... *an e-book player using the present invention could store a book library four times as large as would be possible using indexed text files, while providing more rapid and more robust search and display capabilities.*"

The Board clarifies it position by interpreting this description, as follows:

"*We understand this passage to mean that each e-book is converted to and stored as a respective integer file. For the following reasons, we hold that the phrase 'document corpus containing an ordered plurality of documents,' which appears in each of the independent claims, reads on one of the books in Call's e-book library. We begin by tak[ing] Official Notice that many books include a plurality of chapters and that some of the books in Call's e-book library necessarily will contain plural chapters.... Next, we note that the term "document" is not defined in Appellants' Specification and therefore must be given its broadest reasonable interpretation consistent with Appellants' disclosure.... The following definitions are relevant:*

> **document** *(1) A named, structural unit of text that can be stored, retrieved, and exchanged among systems and users as a separate unit....*

Definition (1) is broad enough, in our view, to read on a chapter of an e-book that contains plural chapters, with the result that such an e-book constitutes a "document corpus containing an ordered plurality of documents" in the sense of claims 1, 5, 9, 13, and 15. The result of applying Call's conversion method to such an e-book is to generate a first vector in the form of a first uninterrupted listing of integers corresponding to terms in the document (i.e., chapters) such that each said document in the document corpus (i.e., e-books) is sequentially represented in the first vector, thereby satisfying each of the independent claims."

Appellants' Response

Appellants first acknowledge the Board's creativity in raising this new ground of rejection based on Call. However, Appellants respectfully submit that the evidence currently of record fails to meet the initial burden of a *prima facie* rejection for these claims, as follows.

There is no need in Call for a second vector

First, Appellants submit that even if the e-books in Call were to be each stored as a plurality of chapters, each chapter being stored as a document, there is still no suggestion in Call of providing a second uninterrupted vector representing the location of each document (i.e., chapter) in the first vector, as recited in dependent claims 19, 21, 23, and 25. That is, assuming *arguendo* the Board's interpretation that each e-book contains a plurality of chapters each represented by a document, Appellants submit that such document structure would, without further evidence not currently of record, conventionally be represented as a memory structure appropriate for a file hierarchy, since the Board's interpretation implies that each e-book would have to be identified as an entity that is associated with its assumed plurality of documents. Such file hierarchy representation would be in the format of a tree structure or file allocation table of some sort, not a second uninterrupted vector that refers back the first uninterrupted vector representing words of the documents.

Moreover, Appellants submit that additional evidence would have to be provided in order to maintain the rejection for claims directed to the second uninterrupted vector that indicates locations of documents relative to the first interrupted vector.

That is, these claims are describing more than simply that of being able to retrieve each of the plurality of documents whose contents are represented by the first uninterrupted vector. Rather, these claims describe that the location of these files are relative to the first uninterrupted vector. Merely alleging that an e-book includes a plurality of documents that each represents a chapter of the book does not satisfy the plain meaning of the description of this second uninterrupted vector.

<u>The present invention involves more than simply data compaction</u>

Second, and perhaps even more significant, Appellants respectfully submit that the Board's interpretation is too speculative to meet the initial burden of a *prima facie* rejection without additional evidence not currently of record. That is, the description in paragraph [0139] of Call, upon which the Board relies, cannot be interpreted in any manner other than that of the plain meaning of its own wording. This description merely states that an e-book <u>can be stored in ¼ the space of conventional document representations</u> that do not rely upon representation of words as integers.

Appellants submit that, to one having ordinary skill in the art, there is no suggestion in this description that the Board can reasonably make the leap in logic that the e-book is, therefore, stored as a collection of documents in the format of a single integer file. Rather, Appellants submit that this description of Call would imply only that, at most, <u>each chapter</u> (i.e., each document) would be stored as a vector in integer format.

Absent additional motivation, there would be no reason to extend this concept to the <u>e-book structure</u> itself, even if each chapter were to be considered as a document. That is, as explained previously, assuming that each e-book were to be considered to be a collection of chapters each represented as a document, such structure inherently implies a <u>file hierarchical structure</u>, not an uninterrupted vector of words.

What the Board's new evaluation seems to overlook is that the present invention actually developed out of the need to conduct <u>searches on an entire database</u> comprising a large number of very short documents (e.g., see final paragraph on page 13 of specification), such as a database of helpdesk data sets having perhaps a million or more short documents, each less than 1000 words.

In contrast, Call is concerned with compact representation of <u>documents as isolated entities</u> (e.g., see the description in paragraphs [0107] and [0110]), including very large documents (see description in the first sentence of paragraph [0132] relative to the size of the documents in the database originally involved with the development of the present invention. The reference in paragraph [0139], upon which the Board relies, is merely stating that the representation of text data in integer format can reduce space of storage of the text documents by compaction wherein words are represented as integers.

Docket ARC920000023US1

4

That is, there is no suggestion in Call to extend the concept of storing integers within the documents to the entirely different concept of storing the contents of the entire database as a single uninterrupted vector. The invention in Call is directed to only the compaction of text data by storing words in an integer format within each document. This concept of data compaction is different from that of viewing the information content of an entire database as an uninterrupted vector of information.

Thus, the present invention involves more than simply data compaction by representing words as integers. It also includes the aspect of viewing the entire database as a single entity of uninterrupted information content rather than a plurality of discrete documents, even if this plurality of documents is considered as "ordered" in specific examples of a document corpus such as an e-book.

The reason that the present inventors arrived at this concept of viewing the entire database as an integrated search object arises because of the nature of the database that the inventors were working on at that time (helpdesk data sets). The inventors made this leap in perspective when they realized the amount of overhead involved in searching a very large number of very short documents of an entire database of helpdesk data sets.

The environment in Call, particularly the e-book scenario upon which the new rejection is based, wherein the Board considers that each book represents a plurality of documents, has the opposite characteristics in that each such book will generally consist of a relatively small number of very large documents.

Searching such a document corpus would not have the overhead involved in opening up many small documents. Accordingly, Appellants submit that, absent additional evidence not currently of record, one having ordinary skill in the art would have had no motivation to "jump outside the box" and consider either the entire e-book library or even a single e-book as a database to be represented in its entirety by a single uninterrupted vector of integers.

Thus, Appellants respectfully submit that the new rejection based on Call fails to articulate a reasonable
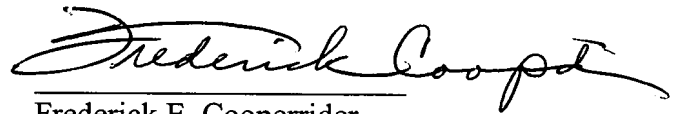
CONCLUSION

In view of the foregoing, Appellants submit that claims 1-25, all the claims presently pending in the application, are clearly enabled and patentably distinct from the prior art of record and in condition for allowance. Thus, the Board is respectfully requested to remove all rejections, including its own new rejection for claims 1, 5, 9, 13, 15, 18, and 20-22, or to provide additional evidence that supports this rejection.

Please charge any deficiencies and/or credit any overpayments necessary to enter this paper to Assignee's Deposit Account number 09-0441.

Respectfully submitted,

Dated: _07/09/07_

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Docket ARC920000023US1